

## **PREVENTION OF BREAST CANCER & PROSTATE CANCER**

by Dr. Robert "Chip" Travis - Dec. 1, 2016

**Cancer is the 2nd leading cause of death in the US**, near equal to cardiovascular disease. Breast cancer (BC) is the leading cause of cancer death in women, prostate cancer (PC) is number 2 cancer death in men. Both are possibly 90% preventable for a population; an individual can reduce 90% of their own risk. In the last year of accumulated data for the US, 41,211 women died of BC, 14,195 of ovarian cancer, and 9,727 of uterine cancer, totaling 65,133 deaths of female cancers (465 men died of BC). 28,343 men died of PC.

All diseases have factors that alter their risk. In the age of internet information, research is easy. PUBMED.GOV and LEF.ORG are the sites for most information on prevention of breast cancer and prostate cancer. A major factor in BC risk is lifetime exposure to estrogens (especially estradiol). A major factor in PC risk is lifetime exposure to dihydrotestosterone (a metabolite of testosterone) and estrogen.

Some factors are beyond an individual's control. Genetics and family history may be factors for increased risk of BC or PC. As risks for a population, they account for 10-15% of BC or PC. Therefore, 85-90% of all BC and PC risk is within individual control. These factors for BC or PC risk (and almost all cancers and most other diseases as well) include the following: diet, nutrition, nutritional supplements, exercise, weight/obesity, vitamin D3, sunlight exposure, HRT, LAN, alcohol, cigarette smoking, environmental toxins.

### **VITAMIN D3 AND SUNLIGHT**

The easiest way to decrease risk of BC or PC is through the supplementation of vitamin D3. D3 is really a hormone made by a person's exposure of skin to direct sunlight when UVB rays can penetrate the atmosphere. This is during the time of clear sky between 10 AM and 2 PM. UVA rays do not produce D3.

Vitamin D3 websites VITAMINDCOUNCIL.ORG, and GRASSROOTSHEALTH.ORG list every research paper they quote. Supplements of 5,000 to 10,000 IUs are needed to achieve blood levels above 40 ng/ml to achieve significant protection. SUMMARY: Vitamin D3 may reduce BC/PC 50-77%.

Studies found:

1. Meta-analysis of 21 studies of D3 levels in blood found a 45% reduction of BC in those women with highest D3 levels vs lowest. Similar analysis of calcium levels found a 18% reduction of BC.
2. A study of supplementation using only 1100 IU of D3 and 1400 mg of calcium found a 60 % reduction of all cancer in first year and 77% reduction in next 3 years.
- 3 The highest combined levels of sunlight exposure and D3 supplements reduced BC incidence by 65%.
4. Women with D3 blood levels of 40 ng/ml were associated with a 67% reduction of all cancers compared to women with blood levels of 20 ng/ml or lower.
5. Men with blood levels of 85 nmol/L (34 ng/ml) or above had a 64% reduction of PC incidence vs men with less than 68 nmol/L (27 ng/ml).
6. In 1000 cases of fully diagnosed PC, 50% more men with the highest 20% of blood D3 levels lived more than 3.3 years than the men with lowest D3 levels.

1. Breast Cancer Research and Treatment 10/23 /2009. 2. American J of Clinical Nutrition June 2007. 3. Cancer Epidemiology Biomarkers and Prevention May 1999. 4. PLOSONe April 6,2016. (GRASSROOTSHEALTH.ORG members) 5. Cancer Causes and Control 2016 May; 27(5):669-77 6. Cancer Epidemiology Biomarkers and Prevention 2016 Apr;25(4):665- 9

### **NUTRITIONAL SUPPLEMENTS**

The more plant based a person's diet is, the lower the incidence of BC, PC, and all cancers. The probability that persons raised on a meat and dairy omnivorous diet will become largely vegetarian is not high. Therefore, a case can be made for the supplementation of plant phytochemicals in concentrated form in hopes of achieving some degree of protection. There are many phytonutrient formulas available as supplements. A partial list of the most effective includes: curcumin, lycopene, cruciferous vegetables (I3C, DIM) resveratrol, soy isoflavones (genistein, daidzein) green tea (EGCG) zeaxanthine, pomegranate, saw palmetto, reishi mushrooms. Protective vitamins and minerals include iodine, selenium, zinc, vitamin K2, gamma-tocopherol vitamin E, C, B-complex and coenzyme Q10.

**SUMMARY: There are too many references to list for all of these and others, so I suggest a computer search starting with:**

1. LEF.ORG, Life Extension Foundation magazine Dec 2013 (241 references) 2. PUBMED.GOV— phytochemicals & breast cancer, prostate cancer, cancer 3. mercola.org daily email blog—search any topic. start 10/23/2016, prostate cancer prevention (18 references)

### **LIGHT AT NIGHT (LAN)**

LAN/ ALAN is light at night, or artificial light at night. It is a major interference with the production of melatonin. Melatonin is a hormone produced by the pineal gland in the center of your brain in the presence of darkness. Any light source can interrupt the production of melatonin and therefore interrupt sleep. Melatonin is available at any health food store or supermarket. Most people try 3 mg to start. Melatonin and sleep are important for immune function and cancer prevention. More sunlight exposure during the day yields greater melatonin production at night.

**SUMMARY: Sleep in complete darkness.**

1. Integrated Cancer Therapy 2016 Jul 20. 2. Science Total Environment 2016 Aug 13. 3. Chronobiology International 2015;32(8):1029-48 4. Chronobiology International 2009 Jan: 26(1) 108-25

### **(HRT) HORMONE REPLACEMENT THERAPY**

Hormone replacement therapy for women and men has benefits of enhanced quality of life, less overall body pains, reduced mortality, improved cognitive ability, reduced osteoporosis and other health improvements. However, HRT for women has documented increases in BC, but only if it uses a synthetic and therefore patented chemical to mimic progesterone.

**SUMMARY: HRT is safe with bio-identical hormones.**

1. There is a safe formula for HRT using estradiol and the real hormone progesterone which does not increase the incidence of breast cancer.
2. Traditional prescription formulae which use synthetic progestens or progestegens, can cause 2 to 3 fold increased breast cancer incidence depending on years of use.
3. There is NO increase in breast cancer with bio-identical progesterone.
4. The manner in which synthetic progestin/progestegens stimulate breast cancer has been determined.
5. Testosterone replacement therapy is not associated nor causative of increased Prostate Cancer.

1. Archives of Gynecology and Obstetrics 2014 Aug; 290(2)207-9 2. British J of Cancer 2016 Aug 23:115(5)607-15 3. Climacteric 2013 Aug; 16 Suppl 1:44-53 4. J of Steroid Biochemical Molecular Biology 2014 Sep: 143:404-1 5. Prostate Cancer and Prostate Disease 2014 Jun; 17(2)132-43 6. British J of Urology International 2016 Nov; 118(5): 731-41

### **ENVIRONMENTAL TOXINS**

Mammary glands in breasts and prostate glands are endocrine glands secreting hormones. There are 100's of common toxins in our environment that are classified as "endocrine-disrupting chemicals" (EDCs). Some are pesticides and herbicides used in commercial and yard agriculture (Round Up). Others are products used in plastics, cosmetics, hair dyes, clothing and fabrics. They are ubiquitous in our modern world and impossible to avoid completely. But, when possible, it is a good practice to avoid them by knowing which EDCs are in what products.

**SUMMARY: On-line sites that provide valuable information:**

1. mercola.com (start with Nov 2, 2016) 2. EWG.org (Environmental Working Group) ratings of cosmetics for safety 3. PUBMED.gov

### **ALCOHOL CONSUMPTION**

Evidence is some alcohol consumption increases risk of BC and PC. It also appears that wine, especially red may be less dangerous than other forms.

1. Each 10 grams/day pure alcohol increased BC risk by 4.2% (translated into real terms, by my calculations, if a woman drinks 1/3 of a 750 ml bottle of 15% alcohol wine daily, she consumes 37 grams of alcohol, thereby increasing risk by 15%).
2. Low fiber intake (low vegetable/fruits diet) with 10 grams/day increase risk by 6%, but higher intake of vegetable/fruits increased risk only 2% per 10 grams
3. Low consumption of wine, less than 12 gm/day, was associated with about 50% reduction in BC incidence, while above that gave increased incidence but not significantly so.
4. Higher beer consumption gave a 18-68% increase of PC depending on lifetime consumption, current drinking habits, and most recent PC screening timing, but no increased risk with wine consumption.
5. No clear associations found for PC incidence with beer or liquor consumption, but a 6% decrease for PC with every glass of red wine per week.
6. Lifetime consumption of liquor was associated with a 61-67% increased incidence of PC, but no associations were noted for beer or wine.

**SUMMARY: Drink wine, maybe beer, not so much liquor.**

1. International J of Cancer 2015 Oct 15; 137(8) 1921-30.
2. International J of Cancer 2016 Sept 6.
3. Annals of Epidemiology 2008 Jun; 18(6):467-75
4. Cancer Epidemiology 2016 Sept 21:45:41-50
5. International J of Cancer 2005 Jan 1; 113(1):133-40
6. International J of Epidemiology 2001 Aug;30(4):749

## DIET AND NUTRITION

Both BC and PC are influenced in the same ways by diet and nutrition. In short, the higher percentage of plant foods, especially vegetables and cruciferous vegetables eaten, the less risk of cancer. The more animal protein and fats and especially processed meats eaten, the higher the risk.

1. BC incidence reduced 22% by a healthy diet, 14% by extra vitamins with diet compared to a standard "Western" (typical USA) diet.
2. Average daily consumption of 3.5 oz. of beef and pork increased risk of BC 11% and PC 19%. Consumption of 1.8 oz. of processed meat daily increased BC risk by 9%.
3. Women who adhered best to a recommendation for healthy diet, exercise, and normal body weight reduced their risk of BC by 24-26% whether they had non-modifiable genetic risks or not.
4. A meta-analysis of 12 studies on effects of diet, physical exercise, and body weight found a decrease of 10-60% for all cancers and 19-60% for BC.
5. Meta-analysis of 200 studies found that persons eating highest proportion of plant foods had only 50% cancer incidence as those who ate the least plant foods.
6. Vegan diet followers had only 65% of PC incidence as omnivorous men.
7. Consumption of higher percentage of soy products, rice, wheat and vegetables reduced risk of PC 33% vs lesser consumption of those plant foods, and if a man had a BMI of 25 or less, the reduced risk was 50%.

**SUMMARY: The more plant foods eaten, especially cruciferous vegetables and soy products, and fatty fish, the less likely BC or PC becomes. The % of risk reduction (RR) is anywhere from 20 to 50 % and additional protection is afforded by normal body weight.**

1. Canada Journal of Public Health 2016 Jun 27:107(1)
2. J Internal Medicine 2016 Sept 6.
3. International J Cancer 2016 Jun 1:138(11):2602-15
4. Cancer Epidemiology Biomarkers and Prevention 2016 Jun 25(7):1018-28
5. Nutrition and Cancer 1992 vol.18(1)
6. American J of Clinical Nutrition 2016 Jan; 103(1): 153-60
7. British J of Cancer 2005 Oct 31; 93(9): 1057-61

## EXERCISE

Exercise and continuous physical activity in many forms are preventive of BC and PC and other cancers. Exercise increases blood flow and oxygen/nutrient delivery, immune system performance, reduces insulin and insulin like growth factor (IGF), blood glucose, and obesity. Research on exercise and physical activity gives widely divergent results in that there is no firm definition of levels of exertion to have benefits. The consensus is that more duration, more intensity and more consistency (years starting when young) affords better protection.

**SUMMARY: Any activity that promotes weight loss, muscle strength or endurance or heart health can be preventive of BC and PC.**

Research in this area found:

1. Meta-analysis of 26 studies found a 37% reduction in mortality from BC, PC, and CRC (colorectal cancer) for those who exercised most vs least.
2. 3.8 hours of exercise per week reduced cancer incidence 58% in women 40 years old or younger.
3. 30 minutes of walking 5 times per week reduced BC 20% in post menopausal women, and 10 hours prevented 30% only in women of normal or lighter body weight.
4. A meta-analysis of 62 studies found cancer reductions of 25-30% in women who exercised most, with greater reductions for higher intensity or longer duration, again only in women of normal or lesser weight.
5. Met-analysis of 16 studies on exercise found 11 of 16 showed a 12-60% reduced incidence of BC.

1. Clinical Cancer Research 2016 July 12. 2. Journal of National Cancer Institute 1994;86(18):1403-08. 3. Journal of the American Medical Association 9/10/03. 4. British Journal of Sports Medicine Aug 2002. 5. Journal of the National Cancer Institute 1998 Jan 21; 90(2):100-1

**OBESITY**

The general relation of overweight/obesity with BC seems well-established in women. The heavier a woman is, the more likely BC will occur. The incidence is increased in post-menopausal women more so than pre-menopausal.

1. Women with a waist to hip ratio of 0.95 or greater, pre-menopausal had 4.3 times the risk, post-menopausal had 3.4 times the risk of women with a waist to hip ratio of 0.84.
2. Body-mass index (BMI) of 30 or more increased BC risk by 1.8 times pre-menopausal and 3.8 times post-menopausal.
3. "High body-mass index has become the leading risk factor of disease burden in high income countries." Correlations of weight/obesity/BMI in PC are much more confusing, but the general scientific thought is that higher BMI equals higher incidence of PC.

Four studies you might find helpful:

1. PC risk elevated by 24% if overweight, 44% if obese.
2. Obesity at age 50 increased incidence of fatal PC by 2-2.65 times.
3. "No statistically significant associations were seen between BMI and PC risk"...results indicate positive associations to high-grade PC and inverse associations to low-grade disease.
4. Lastly, in an overview of PC with many variables mentioned, a final question: "does it really matter?" given the multiple adverse effects of obesity on general health.

**SUMMARY: Maintain a normal and lean body weight.**

1. European J of Cancer 2016 Aug 26; 66:153-61. 2. Asian Pacific J of Cancer Prevention 2016;17(7): 3587-93.
3. PLOSmed 2016 Aug 16; 13(8). 4. International J. of Cancer 2016 Oct 14 (Epub before print)
5. J of National Cancer Institute 2016 Oct 20:109(3) 6. International J of Cancer 2016 Jul 1;139(1) 50-57
7. Urology 2002 Apr; 59(4 Suppl 1) 41-50

**There are actions anyone can do TODAY to reduce their risk of BC or PC.** Eat less meat or other animal protein/fat, more plants; take a walk in the sun or even exercise intensely; take 5-10,000 IU D3 and some other supplements; avoid LAN with curtains/sleep mask; avoid chemical toxins at home. Long term, continued efforts in these areas can reduce weight and the risks of BC/PC, other cancers, and almost all other diseases.